

Amendments to the Specification

Please replace ¶ [0009] with the following:

[0009] U.S. Pat. No. 5,965,907 suggests the use of a stacked OLED backlight capable of field sequential color in a transmissive LCD display, however, to meet the demands of a transfective display and still maintain small size, there is a need to improve the efficiency of OLEDs used for that purpose. A large portion of the light generated from the active regions of a typical OLED is totally-internally-reflected and lost before escaping the device due to refractive index mismatches in the device layers. Moreover, in a typical transfective display, a large amount of the light that is emitted from the backlight in the transmissive mode is absorbed by a partially transmissive/partially reflective “transfective” layer located between the backlight and the viewer. In addition, the partially transmissive/partially reflective transfective layer compromises reflectivity in the reflective mode because of the necessity to accommodate operation in both modes. Because of the many loss mechanisms present, providing sufficient illumination in the transmissive mode while at the same time optimizing the reflective mode in transfective display, remains a significant problem.

Please replace ¶ [0029] with the following:

[0029] Transparent OLEDs 152 and 154 are disposed between conventional OLED 156 and light modulating element 180. Each of transparent OLEDs 152, 154 includes a substrate element (172, 173) having disposed thereon a transmissive first conductive electrode layer (114, 115) comprising, e.g., a layer of indium-tin-oxide (ITO). In this embodiment, substrate elements 172, 173 have smooth planar surfaces, although they may have alternative surface characteristics in alternative embodiments. Disposed over the first electrode (114, 115) is an emissive organic layer (111, 116) followed by a transmissive second conductive electrode (106, 107). In one embodiment, organic layer 119 emits blue light, organic layer 116 emits green light and organic layer 111 emits red light.

Please replace ¶ [0039] with the following:

[0039] FIG. 3 shows an alternative embodiment 102 wherein, as in FIG. 1, the conventional OLED is fabricated upon the roughened surface of the light scattering substrate element but the electrodes are reversed relative to those shown in FIG. 1. Like parts are like numbered to those in FIG. 1. As in FIG. 2, epoxy material 198 may be used to form a hermetic seal. Conventional OLED 159 is a top emitting device with reflective conductive electrode 129, organic emissive layer 119 and transmissive conductive electrode 131 disposed, in that order, over light scattering substrate element 112 on the same side as roughened surface pattern 113. Thus the irregularities of the roughened surface 113 also appear on the metal surface of reflective electrode ~~[[117]]~~ 129.

Please replace ¶ [0041] with the following:

[0041] Transmissive electrodes 210, 220 and 230 serve as electrodes for organic light emitting layers 222, 224, 226 respectively and can be made of a transparent conductive material. Therefore, the light emitted by light emitting layers 222, 224 and 226 can be transmitted through transparent conductive layers 210, 220, 230 to light modulating element 280. The backlight 285 thus comprises first OLED region 250 (defined by opaque reflective electrode 240, organic light emitting layer 226 and transparent electrode 230) second OLED region 252 (defined by transparent electrode 230, emissive layer 224 and transparent electrode 220.) and third OLED region 254 (defined by transparent electrode 220, emissive layer ~~[[224]]~~ 222 and transparent electrode 210). The reflective electrode 240 and the transparent electrodes 210, 220, 230 are electrically connected to a driving circuit (not shown). In the transmissive mode, a bias is applied thereon causing organic light emitting layers 222, 224, 226 to emit desired colors of light by turns, i.e. in a sequence of R, G, B, R, G, B. Arrows 261R, 261G and 261B are analogous to arrows 161R, 161G and 161B of FIG. 1 and illustrate the transmissive mode wherein the different wavelengths (red, green and blue, respectively) are time sequenced. Arrows 262 and 263 are analogous to arrows 162 and 163 of FIG. 1 and illustrate the reflective mode.

Please replace ¶ [0044] with the following:

[0044] Preferably, the roughened surface of the light scattering substrate element is used for OLED deposition. For example, as shown in FIG. 1, the electrodes and organic layers of conventional OLED 156 are formed in a predetermined thickness along the roughened surface pattern 113 of light scattering substrate element 112. The reflective electrode 117 contains a metal material such as, for example, silver, aluminum, or the alloys thereof with a high reflection ratio. When conventional OLED 156 is deposited on roughened surface 113 of light scattering substrate element 112, the shape of underlying roughened surface 113 is imparted to the device layers, including reflective electrode 117. It is known that undulation of a reflective surface controls scattering of reflected light so as to concentrate the reflected light in a certain range of area, and raise a reflected light intensity with respect to a specific observation direction. The roughened surface acts as a light-scattering plane to scatter and reflect light emitted from the backlight or entering from the ambient environment.

Please replace ¶ [0048] with the following:

[0048] The present invention thus discloses a new and improved integrated full color transfective display with enhanced brightness comprising a stacked OLED backlight and a light modulating element that is either encapsulated with the backlight to form a hermetic seal or is positioned adjacently to the backlight. Preferably, the distance between the reflective electrode and the light modulating element is less than about 5000 microns, preferably less than 4000 microns and may be less than 2000 or even less than 1000 microns depending on device structure. The stacked plurality of OLEDs conveniently integrate electrical connections and are provided with external connections thereto. If desired, additional optics may be positioned exterior the small compact package which is easily integrated into portable electronic equipment.